

DK-40B

series

GUIDE TO YOUR YAMAHA ELECTONE



Welcome to the Yamaha world of music. We are sure your selection of a Yamaha Electone was a wise one, and we want you to know that we will do everything possible to help you derive a lifetime of enjoyment from this fine musical instrument.

Please read this manual carefully to be sure you are familiar with each of the Electone's features and their expressive possibilities. In that way you and your Electone can become lifelong partners in musical creativity.

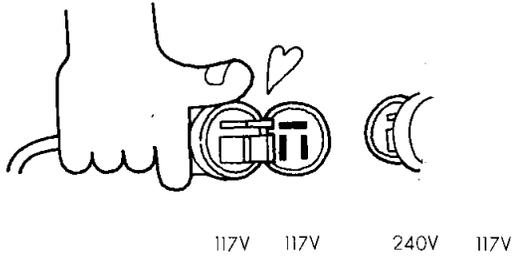
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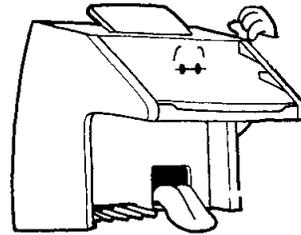
Care of Your Electone

In general, treat your Electone with the same care you would any fine musical instrument. The following points are suggested for optimum enjoyment.

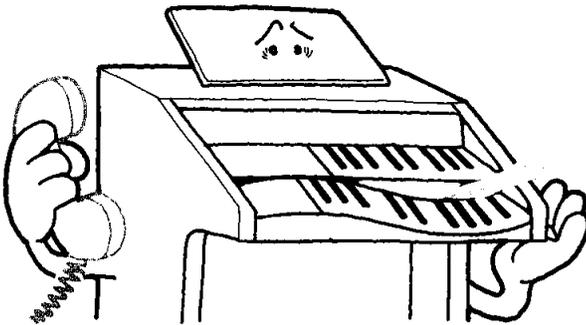
1. Use only proper line voltage. Consult your Yamaha serviceman for changes.



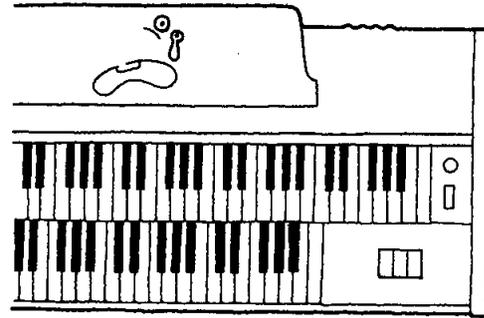
5. Shield the cabinet from direct sunlight, humidity and heat to protect the finish and joints.



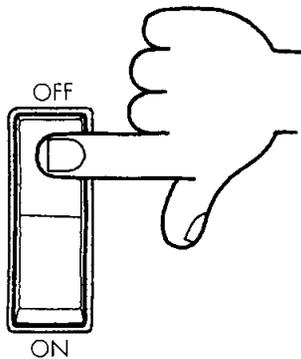
2. Never touch the inside parts yourself.



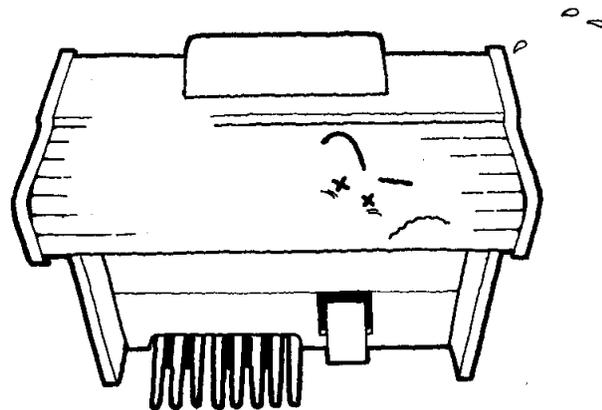
6. Do not hit or scratch the cabinet with a hard object.



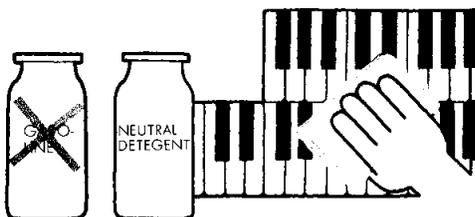
3. Always shut off the power after playing.



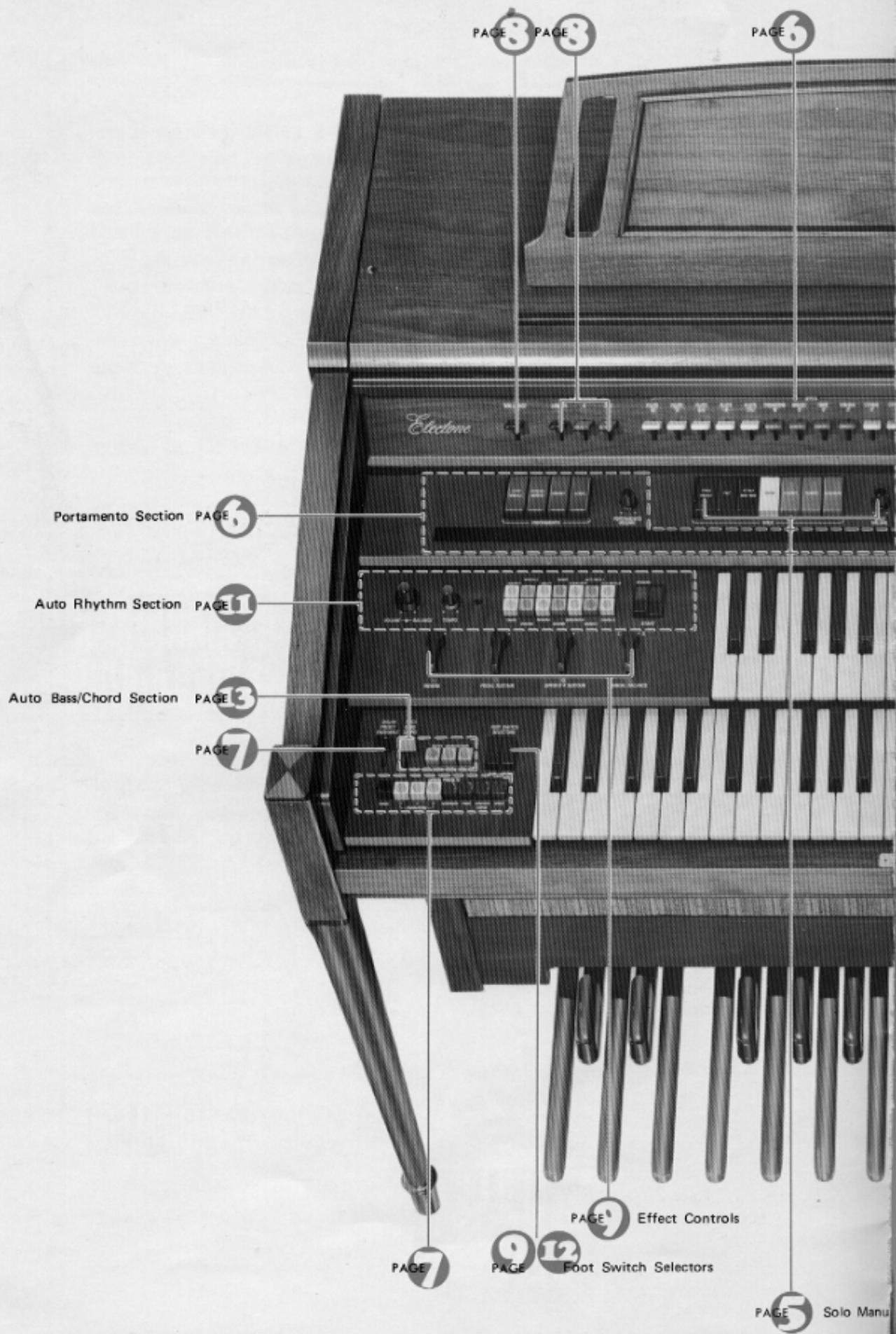
7. To open or close the fallboard grasp the front lip with both hands and slide gently. Never pull directly upwards. Do not place anything heavy on the fallboard.

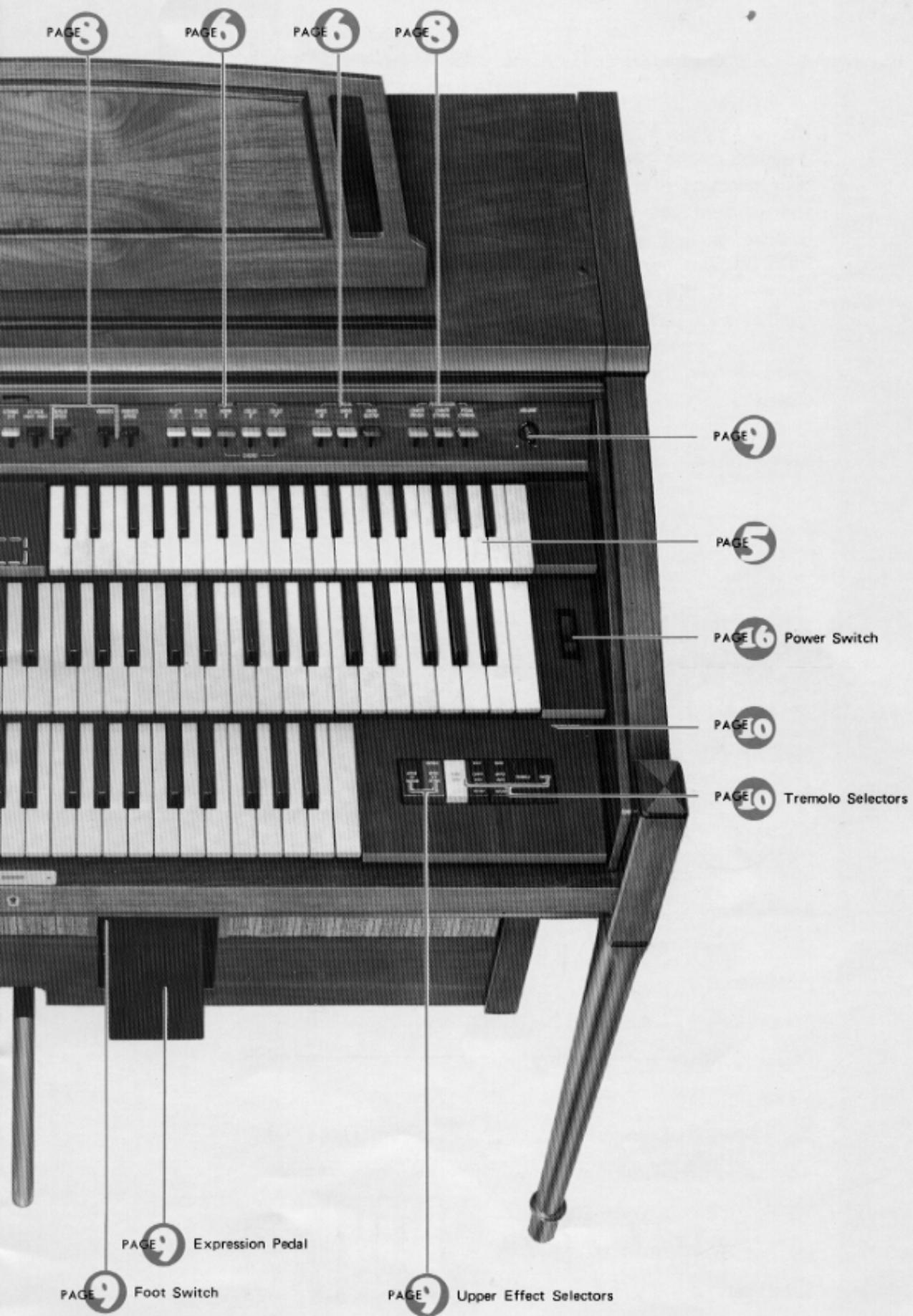


4. Clean keys, etc, with a damp cloth only. Never use solvents such as gasoline; they will damage the finish.



This is Your Electone





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Voice Selectors

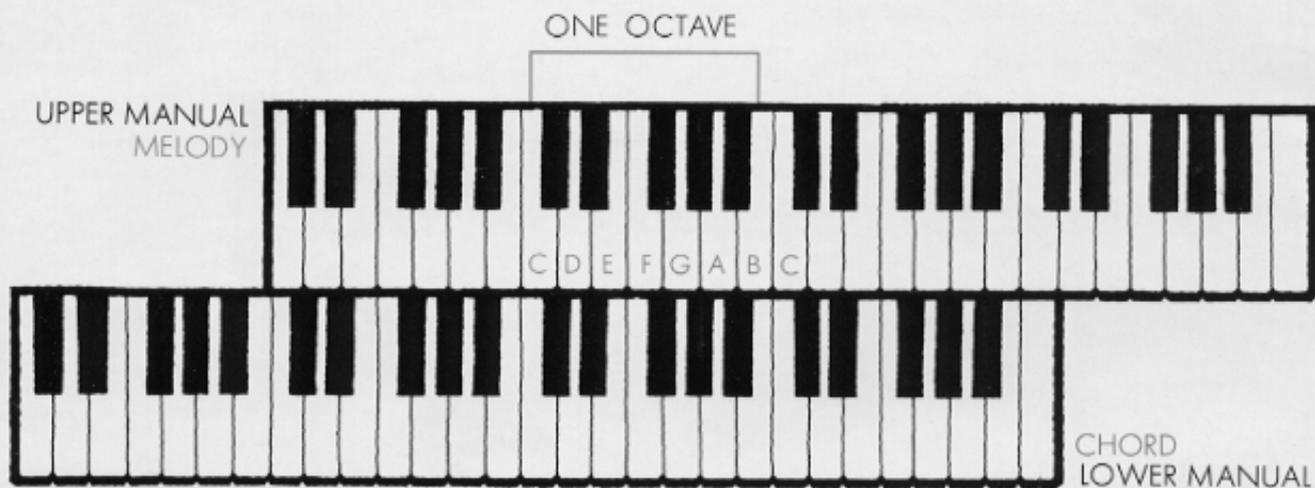
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Keyboards

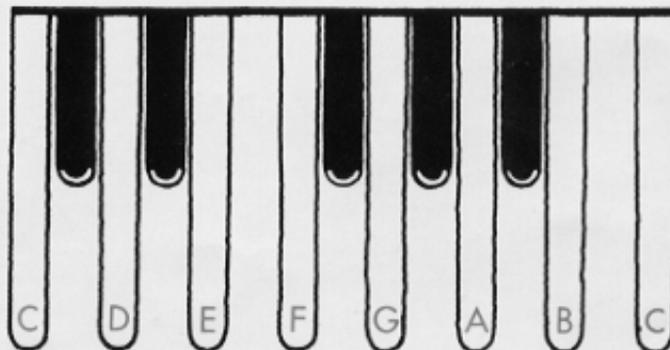
The DK-40B has five keyboards. The upper four are called "manuals" ("solo", "portamento", "upper" and "lower"), and the bottom, for the feet, is the "pedals."

Upper Manual	4 octaves	c ~ c ₄
Lower Manual	4 octaves	C ~ c ₃
Pedals	1 octave	C ₁ ~ C
Solo Manual	3 octaves	c ~ c ₃
Portamento	2½ octaves	f ~ c ₃

The Electone is designed to permit playing the melody on the upper manual with one hand, the chords on the lower manual with the other, and bass notes on the pedals with either foot. For special selections the solo manual can be used to provide a melodic line with its own exciting voices. Use the portamento manual to create a range of unique sounds, pressing or sliding your finger(s) up and down. All keys and pedals are arranged in the traditional keyboard method: two black keys, three black keys. Each white key has a name (from C to B), and the blacks are sharps or flats. "C" is always the white key just below the left black key in the two-black-key group. Any complete set of seven white keys and five black keys is called an "octave".



PEDALS
BASS



Solo Manual

SAXOPHONE



CLARINET



TRUMPET

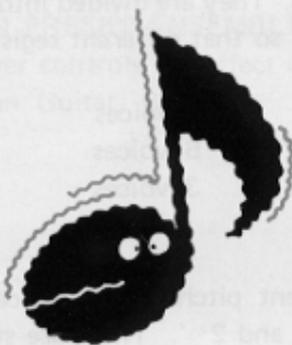


VIOLIN



All four Solo voices have been specially designed for brilliant realism. Each voice is set via its selector tablet at the left of the Solo manual.

Note: The four voice tabs, i.e., Violin, Clarinet, Trumpet and Saxophone, control voices which purposely cannot produce chords; if two or more keys are pressed simultaneously, only the higher will sound. Please also note that solo voices cannot be combined. If two or more voice selector tabs are pressed, the one to the right takes precedence.



TOUCH VIBRATO

This world-famous Yamaha exclusive gives to the organist the same expressive fingertip vibrato enjoyed by the violinist. With this effect, vibrato can be applied to any solo note by the lateral vibration of the hand, and its speed will correspond exactly to the hand's vibration.

FUZZ

Fuzz is frequently used on the electric guitar. This Fuzz effect affects each tone of the Solo manual by switching the Fuzz selector "ON."

ATTACK WAH-WAH

Works like Upper manual wah-wah for solo tones.

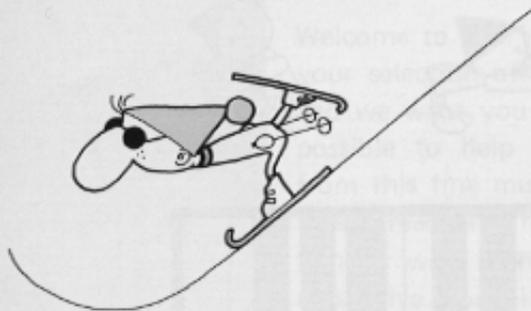
Note: When Attack Wah-Wah and Fuzz are both set, the former will have precedence. Touch Vibrato and Attack Wah-Wah can be used simultaneously.

SOLO VOLUME CONTROL

This permits a variety of manual balance settings.

Wah wah

Portamento Manual

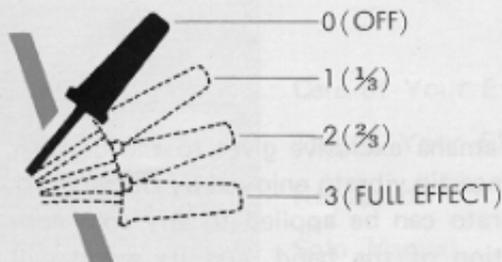


The Portamento manual produces continuous pitch shifts just like those produced when the finger slides up and down a violin string. The $2\frac{1}{2}$ octave range becomes higher toward the right. There are four Portamento voice selector tabs and except for the Astro tab they can all be combined with each other. If the Astro tab is set it cancels all the others.

PORTAMENTO VOLUME CONTROL

This permits a separate volume control.

Tone Levers

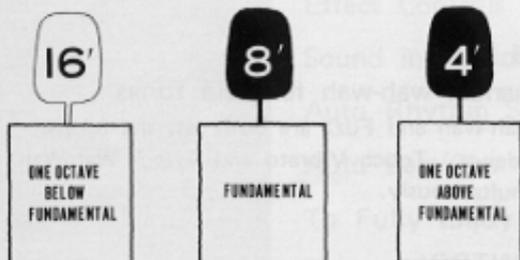


On the panel above the solo manual and selectors is a series of tone levers which control the voices (instrument sounds) which will be heard when the keys are depressed, as well as many of the effects. They are divided into groups for upper, lower and pedals, so that different registrations can be set for each.

Upper Manual Levers	12 voices
Lower Manual Levers	5 voices
Pedal Levers	3 voices

PITCHES OR FOOTAGES

The DK-40B has five different pitch levels, indicated by the numbers 16', 8', $5\frac{1}{2}'$, 4' and $2\frac{3}{4}'$. These are standard musical abbreviations showing the tone's pitch in relation to the fundamental (written note). An 8' tone will sound just as it has been written. As the numbers increase, the tones lower. A 16' tone (meaning that the wave length of the vibrations are twice as long as 8', or half as fast) will provide a tone exactly one octave lower than the written note. Similarly, $5\frac{1}{2}'$ tones are a fifth higher than the written note, 4' tones one octave higher, and $2\frac{3}{4}'$ tones one octave and a fifth above the fundamental. Tones at octave intervals from the written notes are "consonant harmonics," while all others are "dissonant."



Upper Preset Tones



To the left of the lower manual are eight Upper Preset Tone selectors (seven tones plus Cancel). These on/off switches are special tonal blends that most closely resemble the instruments they name (Accordion, Piano, Hawaiian Guitar, Banjo) as well as three special preset combinations.

Since these buttons are factory preset, they automatically cancel all other upper manual tone lever settings. This lets you switch back and forth. In addition, precedence is to the right. This means that if two or more buttons are pressed, the one to the right will take effect. To switch from one button to another it is not necessary to first press the cancel button.

Note: Upper Sustain control lever does not work with the Accordion, Piano, Hawaiian Guitar and Banjo preset selectors.

ORGAN PRESET ENSEMBLE

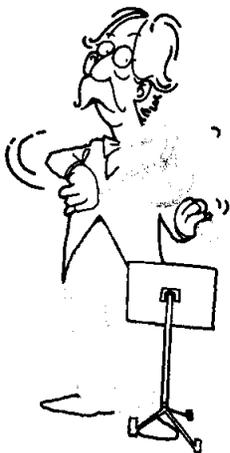
This lever controls the effect which adds the upper tone to the upper preset tone. (Accordion, Piano, Hawaiian Guitar, Banjo)



Effect Control Levers different effects which and a variety of total variations to the Electone's voices. Each lever works in the same way as the tone levers, with both infinitely-variable continuous control and click-stop settings.

Brilliance

With this single, continuously-variable control you can pinpoint the degree of overall softness or clarity desired for any mood of music.



Vibrato, Vibrato Speed

Vibrato is an emotional wavering applied to a tone most noticeable in the trembling left hand of violinists and cellists. It can add a great deal to the emotional depth of a passage, especially string voices. The Vibrato lever provides continuous adjustment of this effect's depth, while Vibrato Speed lets you continuously set the vibration speed.

Repeat Speed

Cuts and repeats each note just like the double-strumming effect of a mandolin. The lever provides continuous speed adjustment to create a full variety of different moods. Affects upper manual notes only.

Upper Percussive

Changing the beginning of some or all notes can do wonders for lively selections. Your Electone's percussive effects provide subtle but important shading at the moment each note is heard. The special popping 4' and 2 3/4' percussive drive can be smoothly blended into all upper manual tones with two variable levers, and a separate lever regulates the length of decay for this effect. With percussive, use a staccato fingering. Each note should be played cleanly; slurred notes will diminish the percussive impact.

Note: If Upper Percussive 4' is set at the same time as Upper Sustain, no sound will be heard.

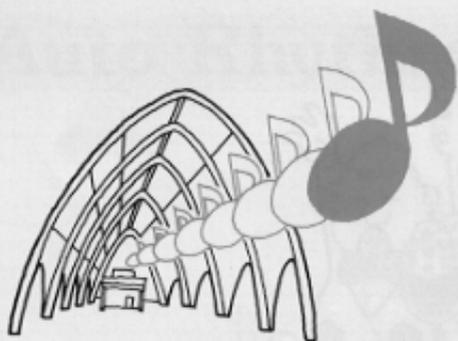
Percussion

LOWER BRUSH, LOWER CYMBAL, PEDAL CYMBAL
Provide lively brush (hissing snare drum brush) and cymbal percussion sounds with each lower manual or pedal note.

Attack Wah-Wah

Provides a spicy wah-wah sound at the beginning of every upper manual tone.

Wah-wah



Reverb

The reverberation effect, which makes your playing sound full and rich, as if you were playing in a large hall, can be adjusted continuously and smoothly to suit your taste.

Sustain

UPPER, PEDAL SUSTAIN

These controls provide continuous adjustment of the sustain effect on the upper manual and pedals concerned. For the pedals, this is the only sustain control, and it affects all pedal tones with the exception of Bass Guitar, while for the upper manual this control is only a length adjustment. Length of upper sustain is controlled by the upper sustain control knob as explained below.



Upper 8', 4' Sustain

When this is switched on, the sustain effect is evoked. As the name of the tab implies, only 8' and 4' tones are affected. The length of such sustain is set by the Upper Sustain control. When combined with Upper Percussive 4', all sound is cancelled.

MANU.BALANCE



Strengthen the Upper Manual Strengthen the lower Manual

Manual Balance

This control governs the relative strength of the upper and lower manuals. It is normally left in the center position, but can be shifted to stress the melody or accompaniment in a selection or passage.

This control can also be used to compensate for a higher number of total tone lever settings (which would ordinarily result in higher volume) on one of the two manuals.

Upper 8', 4' Attack

This tab provides an effective rhythmical element, much like that of a string bass played pizzicato. It is particularly impressive in rhythmic works, and give greater definition to the beginning and end of notes. The 8', 4' Attack tab affects all upper manual 8' and 4' voices.

Glide (FOOT SWITCH SELECTORS)

While the foot switch is pushed when the Glide selector is on, tones will be lowered one half octave.

Expression Pedal

Affects the emotional mood of every passage by letting you vary the volume continuously with your right foot. Works within the range set by the master volume control.

Master Volume

Determines the maximum volume obtainable by depressing the expression pedal.



ON
Foot Switch



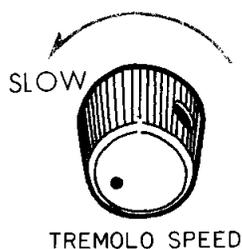
Expression Pedal

Tremolo/Chorus



The Electone's special throbbing tremolo is produced by a rotary speaker that actually spins just behind the rotary speaker grille on the side of the cabinet.

Tremolo selector is complemented by a continuous tremolo speed control knob.

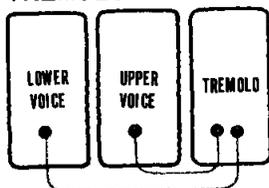


When the speed control is set to its maximum position, the Tremolo will turn the speaker at normal revolution. The Chorus will turn it at one revolution. Once either tablet is switched on, it takes several seconds for the rotary speaker to attain the standard speed. This is also true when switching to a slower speed (Tremolo to Chorus), the speed variation will be heard in the music.

If you wish an instant tremolo or chorus sound, be sure to switch on that tablet well in advance of the speaker selector. For special selections you can use this speed variation by switching the speaker on first, the Tremolo or Chorus switch later.

Note: Only Tremolo is produced when Tremolo and Chorus are switched on simultaneously.

TREMLO



CHORUS



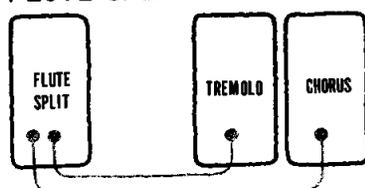
UPPER VOICE

Lets you divert upper manual voices from the main to the rotary speaker.

LOWER VOICE

Does the same for lower manual voices.

FLUTE SPLIT



FLUTE SPLIT

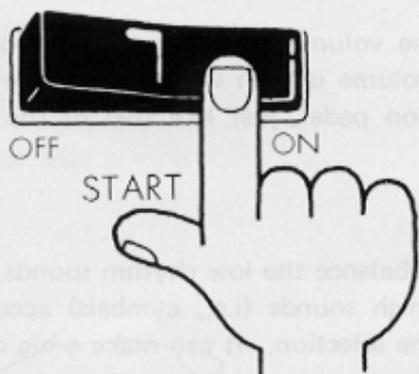
This tablet feeds Flute voices of the upper and lower manuals and preset Combinations to the rotary speaker. Combined with other manual voices through the main speaker it creates a rich, singing blend.

Note: Only Flute Split is produced when Flute Split and Upper or Lower Voice are switched on simultaneously.

Auto Rhythm Section

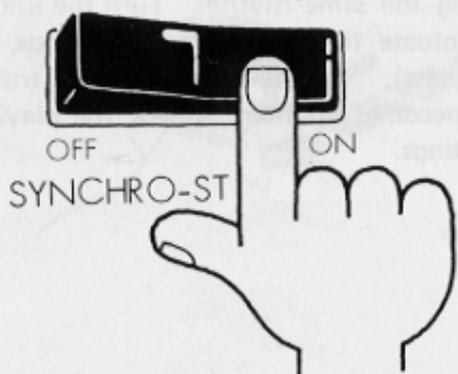


This section provides 14 catchy rhythms, each one produced by a simple button. In addition to a combined volume and balance knob, tempo control and tempo indicator light, there are two other switches: ordinary Start and the Yamaha Synchro-Start which begins the rhythm accompaniment on the first beat of a measure, when the first lower manual or pedal note is struck. The special expression pedal foot switch lets you cut and restart the rhythm at any point during play.



RHYTHM START

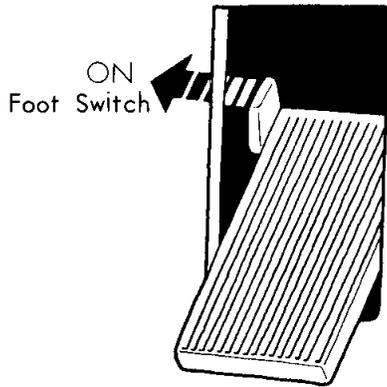
For instant rhythm at the beginning of a selection. Push the rhythm selector desired, then flick the Start switch on.



SYNCHRO-START

Select the rhythm, switch on the Synchro-Start and begin to play once you have the beat established. The rhythm will begin as soon as you strike a lower manual or pedal note. This switch permits you to lead in with a rhythm-free melody at first if so desired.

You can switch off the Auto Rhythm with the foot switch. When you wish to continue hearing the Auto Rhythm, be sure to switch on with the foot switch.

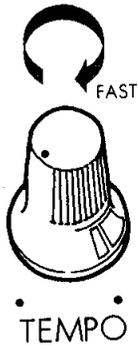


Expression Pedal

RHYTHM STOP (FOOT SWITCH SELECTORS)

This tab activates a click-switch located at the left side of the expression pedal. When the tab is on and the rhythm section operating, touch the foot switch once and the rhythm automatically stops. Touch it again to switch back on.

Note: The tab controls the foot switch. If the rhythm has been cut by the switch and one of the rhythm start switches is still on, cancelling the tab will erase the effect of the foot switch - - in other words, the rhythm will go back on again.



TEMPO

The tempo of the Auto Rhythm section can be adjusted by a continuous control knob. This is best accomplished by turning on the Synchro-Start switch.

Although no sound will be produced, the indicator lamp will flash each quarter note, letting you visually check the tempo while you adjust.

VOLUME

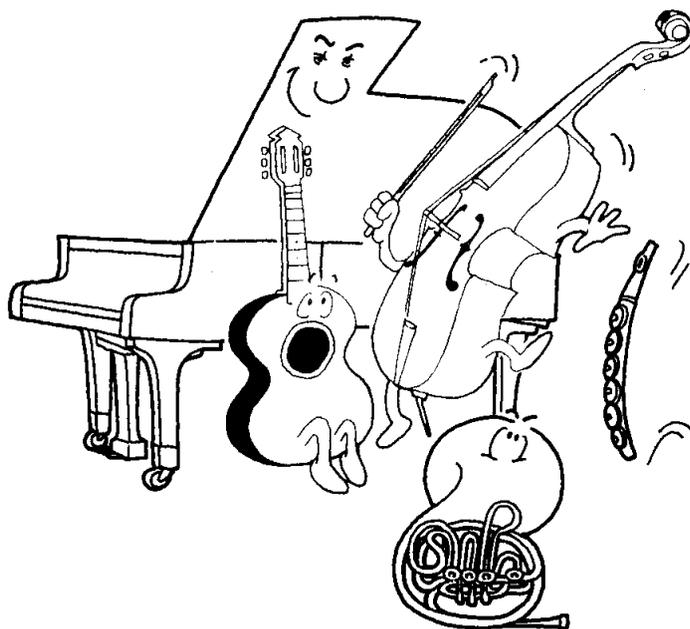
Use it to balance the volume of the rhythm section and the manuals. This volume is then varied during the selection by the expression pedal, just like that of the other tones.



BALANCE

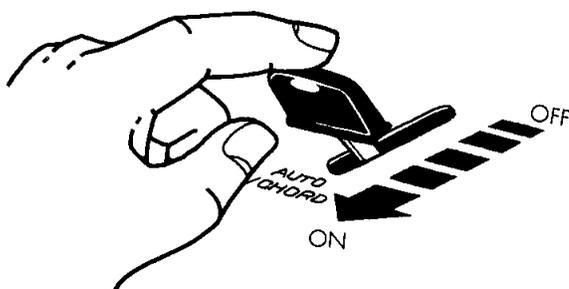
This control lets you balance the low rhythm sounds, such as drums, and the high sounds (i.e., cymbals) according to your mood and the selection. It can make a big difference even when using the same rhythm. Turn the knob to the right to accentuate the higher (treble) sounds, to the left for lower (bass). If you accentuate the treble sounds the rhythm becomes brighter. Check the playing hints for specific settings.

Auto Bass/Chord Section



This section is comprised of the Auto Bass/Chord lever and Bass Variation selectors, all located at the far left of the lower manual. It works in conjunction with the rhythm selector buttons of the Auto Rhythm section.

If you play a lower manual chord without the Auto Bass/Chord lever on, it will sound in the ordinary way, with all notes beginning when pressed, and ending when released. By sliding down the Auto Bass/Chord lever, however, an automatic memory system couples the rhythm section to the lower manual keys and pedals so that the pressed chord will be played one note at a time according to the selected rhythm and bass variation. This rhythm pattern will continue as long as the chord is held down, and fingering is not necessary.



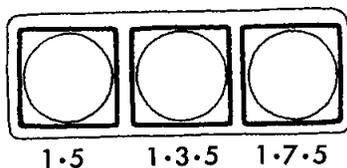
First select the rhythm desired, and set the speed. Switch on the Auto-Rhythm Synchro-Start switch, and turn the Auto Rhythm Volume knob all the way to the left (off). Pull the Auto Bass/Chord Lever forward (on).

Set the Sustain, Bass 16', Bass 8' and Bass Guitar levers to the desired positions.

Push one of the Bass Variation buttons.

Note: When the Auto Bass/Chord is on, the rhythm sounds of the Lower Manual are limited to Horn 8', Cello 8' and Cello 4'. In other words, these are the only Auto Bass/Chord sounds obtainable.

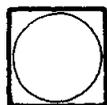
Now, as soon as a lower manual chord (major, minor, seventh or minor seventh) is pressed, the rhythm will go on, but instead of rhythm instrument sounds the rhythm will be played as a variation upon the pressed chord.



After you have mastered this simplest use of the Auto Bass/Chord system, you can vary the effect by choosing between the three Bass Variation selector buttons.

It is also possible to combine the Auto-Rhythm sounds with the Auto Bass/Chord accompaniment; simply turn up the rhythm volume.

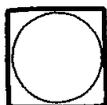
By using the ordinary Start switch instead of Synchro-Start, the combined rhythm sounds will play before and after the chord is pressed.



1·5

This is the basic pattern; it alternates the root (1) and fifth (5) in the bass regardless of rhythm chosen or type of chord. The one exception is the Jazz Rock rhythm, which maintains root (1) pedal and no alternation.

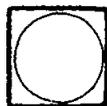
Note: The Slow Rock and Jazz Rock rhythms play only the root (1), when the Rhythm Variation is switched on.



1·3·5

This selector effects the Slow Rock and Rhumba rhythms, with which it will play a root (1), third (3), and fifth (5) pattern. All other rhythms function as with the (1·5) selector.

Note: The Rhumba rhythm will play a root (1), third (3), and fifth (5) pattern, when the Rhythm Variation is switched on.



1·7·5

This selector effects the Slow Rock and Rhumba rhythms when a seventh or minor seventh chord is being played, with which you will hear the root (1), seventh (7), and fifth (5) bass notes. When playing a major or minor chord the unit will perform exactly as it does with the second Bass Variation selector (1·3·5).

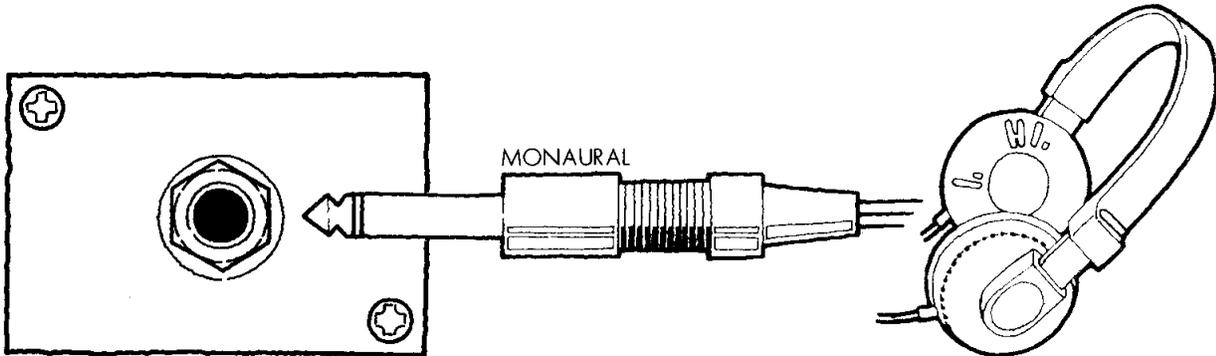
Note: The Rhumba rhythm will play a root (1), seventh (7), and fifth (5) pattern, when the Rhythm Variation is switched on.

To Fully Enjoy Your Electone

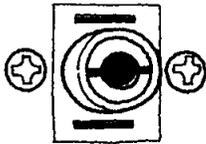
Besides the many tone and effect controls through which almost infinite varieties of voice and expression can be obtained the Yamaha Electone DK-40B offers you a number of additional features to further enhance your playing pleasure.

HEADPHONE

A Yamaha headphone set (optional) can be plugged into the jack under the keyboard. With the headphone connected, the speaker is automatically shut off, allowing you to play or practice at any volume level without disturbing anyone.



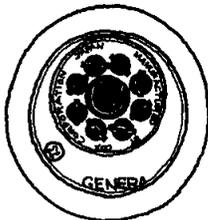
EXTERNAL JACK



This jack can be used for input.

Also, you can feed any sound source into this jack to play that sound (tape recorder, etc.) through the Electone speaker. During input, the signal coming in is not affected by the expression pedal, so you can play along on the Electone in the normal manner.

tone cabinet sockets



GENERAL SOCKET

This socket is on the rear panel. Use it to connect a Yamaha Tone Cabinet, without any rewiring required.

Do not Be Alarmed If ...

1. The set does not go on when the power switch is turned on. Check the following:
Is the AC plug fully inserted into the electric wall outlet? Reinsert it to be sure.
Is there power coming from that outlet? —Unplug the Electone and plug in a lamp; switch it on to check that it lights. If it does not the problem is probably in your household electric system. Check your fuses or circuit breakers.
If there is power in the outlet but the Electone does not play, unplug the cord and contact your Yamaha dealer. There are NO USER-SERVICEABLE PARTS inside.
2. A note sounds the instant you turn on the power switch. This indicates normal operation and not a defect.
3. Only one note sounds two keys are pressed simultaneously.
The electone is designed to play only one note if two or more are pressed at the same time. Only the higher note will sound. This assures tonal clarity.
4. Occasional static occurs.
This is usually caused when other household appliances (refrigerator, etc.) switch on or off. A defective neon sign in the neighborhood can also be to blame. If the cause is a home appliance, plug the Electone into an outlet as far as possible from that appliance. Such static will not damage the Electone circuitry. If the cause is a neon sign or fluorescent light, the unit should be repaired. If you have questions, contact your Yamaha dealer.
5. The Electone reproduces radio or TV signals.
If there is a powerful transmitter such as radio station in the vicinity this can occur. Contact your Yamaha dealer.
6. Rattling (sympathetic vibration) occurs.
All materials have critical resonance frequencies at which they vibrate. The Electone's continuous tones will naturally cause other objects (windows, shelves, etc.) to vibrate.
7. Pedal notes sound too high, upper manual notes too low. This is especially noticeable when comparing the Electone and piano. Piano tones are combinations of harmonics and must interact with their surroundings, while Electone harmonics are simpler (multiples of the fundamental tone), requiring the Electone to be tuned differently.
8. If Upper 8', 4' Attack is set at the same time as Upper Sustain, no sound will be heard.

Specifications

KEYBOARDS

Upper Manual	4 octaves c ~ c4
Lower Manual	4 octaves C ~ c3
Pedals	1 octave C1 ~ C
Solo Manual	3 octaves c ~ c3
Portamento	2½ octaves f ~ c3

TONE LEVERS

Upper Manual	Flute 16'	Brass 8'
	Flute 8'	Oboe 8'
	Flute 5½'	Kinura 8'
	Flute 4'	String 8'
	Flute 2¾'	String 4'
Lower Manual	Trombone 16'	String 2¾'
	Flute 8'	
	Flute 4'	
	*Horn 8'	*It becomes so with ABC.
Pedals	*Cello 8'	
	*Cello 4'	
	Bass 16'	Bass 8'
	Bass Guitar	

PRESET TONE SELECTORS

Solo Manual	Violin	Trumpet
	Clarinet	Saxophone
Portamento	Tenor Whistle	Squawk
	Soprano Whistle	Astro
Upper Manual	Combination 1,2,3	
	Accordion	Piano
	Hawaiian Guitar	Banjo

EFFECT LEVERS

Brilliance	Percussive Length (Upper)
Vibrato	Attack Wah-Wah (Upper)
Vibrato Speed	Repeat Speed (Upper)
Percussive 4' (Upper)	Organ Preset Ensemble (Upper)
Percussive 2¾' (Upper)	

PERCUSSION LEVERS

Lower Brush	Lower Cymbal
Pedal Cymbal	

EFFECT CONTROLS

Upper Sustain	Reverb
Pedal Sustain	Manual Balance (Upper/Lower)

EFFECT SELECTORS

Touch Vibrato (Solo)	Upper Sustain
Fuzz (Solo)	Upper Attack
Attack Wah-Wah (Solo)	Glide (Foot Control)

TREMOLO SELECTORS

Flute Split (Upper/Lower)	Tremolo
Upper Voice	Chorus
Lower Voice	

AUTO RHYTHM SECTION

Rhythm Selectors

March I	Tango
March II	Beguine
Waltz	Rhumba
Swing	Mambo
Slow Rock	Bossanova
Jazz Rock I	Samba I
Jazz Rock II	Samba II
Rhythm Controls	
Rhythm Start	Tempo
Synchro-Start	Volume
Rhythm Stop	Tone Balance
(Foot Control)	
Tempo Indicator Lamp	

AUTO ACCOMPANIMENT SECTION

Auto Bass/Chord Lever	
Bass Variation Selectors	1-5
	1-3-5
	1-7-5

OTHER CONTROLS

Master Volume	Foot Effect Switch
Solo Volume	Tremolo Speed Control
Portamento Volume	Power Switch with Pilot Lamp
Expression Pedal	

OTHER FITTINGS

Headphone Jack
External Input Jack
Tone Cabinet Sockets (Gen., Split)
Roll-top Fallboard with Auto Switch and Lock
Music Rest
Matching Bench with Music Storage Space

SPEAKERS

Main:	JA-5010 (YAMAHA)
Rotary:	JA-1701 (YAMAHA)

CIRCUITRY

Total Output Power:	90 watts
Power Consumption:	150 watts
Power Source:	100/110/117/125/ AC 50/60Hz 220/240V

DIMENSIONS

Width:	117 cm (46")
Depth:	75 cm (29-½")
Height:	99 cm (39")

WEIGHT 110 kg (242 lbs.)

FINISH Natural American Walnut

Specifications Subject to Change without notice.

SINCE 1887  **YAMAHA**
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN